

*SYSTEM DESIGN EVALUATION LTD* SDE

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**DEVELOPMENTS IN SIGHTING/FIRE  
CONTROL SYSTEMS  
FOR  
SUPPORT WEAPON APPLICATIONS**

**Lt Col K M Cook MBE  
Director Project Development**

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# *Support Weapons*

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- 
- Light Cannon
  - Heavy Machine Guns
  - Automatic Grenade Launchers
-

- 
- Introduction
  - UK Programmes
  - Current Technology
  - The Future
-

# *Introduction*

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- 
- Shrinking Budgets
  - Legacy Equipment
  - Importance of Light Role and Air Manoeuvre (AM) Infantry
  - Importance of Organic Support Weapons
  - Improvements in Mission Effectiveness
    - Enhanced Surveillance & Target Acquisition (STA)
    - C4IS
    - Lethality
-

# *Surveillance & Target Acquisition*

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- Detect
  - Recognise
  - Identify
  - Locate
-

# *C4IS*

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- 
- Command
  - Control
  - Communications
  - Computation
  - Information Systems
-

# *Current Shortcomings*

## *Light Cannon, AGLs and HMGs*

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- 
- Iron Sights
  - STA
  - Separate Day and Night Sights
  - 24 Hour Capability
  - Conditions of Obscuration
  - Range Estimation
  - Fire Co-ordination
  - Time into Action
-



# *The Goal*

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- 
- Improved Mission Effectiveness Through The Realisation of the Full Potential of Legacy Equipment
  - The Co-ordinated Application of That Improvement in Capability
  - Ensuring The Capability Is Brought to Bear With the Minimum of Delay
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# *Development Programmes*

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# *Latest Developments*

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- FIST
  - OICW
  - OCSW
  - Striker
  - Oerlikon Contraves
  - FN Modular Assault Rifle
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UK Programmes

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***FIST***  
***Future Integrated Soldier Technology***

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**Technology Demonstrator Programme**

**MOD UK**

**DERA**

**BAE Sys**

**THALES**

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# *FIST*

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**THALES**

## COMMANDER SUB SYSTEM

- Commander Computer
- Global Positioning System
- Digital Magnetic Compass
- Commander Digital Radio (DSL)
- Torso Control Unit
- Ancillary Display
- Load Carriage & Packaging

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## TORSO SUB SYSTEM

- Load Carriage & Packaging
- Personal Role Radio (DSL)
- Rifleman Manager
- Video Processor Unit
- System Power Supplies
- Power Control Unit

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## HEAD SUB SYSTEM

- Helmet Platform
- Helmet Vision System
- Audio Comms System
- Helmet Electronics

**BRITISH AEROSPACE**  
Royal Ordnance

## WEAPON SUB SYSTEM

- F2000IW, LSW, GLIW  
Weapon Control Unit
- Thermal Weapon Sight (PO)
  - Dual Waveband Sight (PO)
  - IR Laser Range Finder (PO)
  - IR Laser Aimer (PO)



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# *FIST Sights*

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Dual Wave Band  
Sight (DWS)



Thermal Imaging  
Sight



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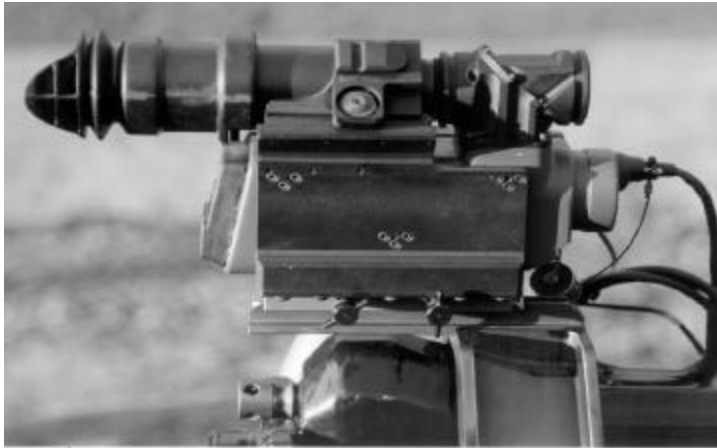
# *FIST Sight Capabilities* SDE

- 
- Optical day sight combined with Night sight (II)
  - Linked Ballistic computer
  - Laser range finder
  - Laser designator
  - Laser Aimer
  - Video camera (Day/Night)
  - Supports a head up display
  - Data communications module
  - Linked Digital Magnetic Compass (DMC)
  - Link to GPS
-



# *RCS Programme*

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**Simrad 2000**

**Simrad II Module**



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**Current UK Sights  
for  
Light Cannon, HMGs and  
AGLs**

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# ***WMIK***

*(Weapon Mount Installation Kit)*

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# *SUSAT & ISTECÔ Interface*

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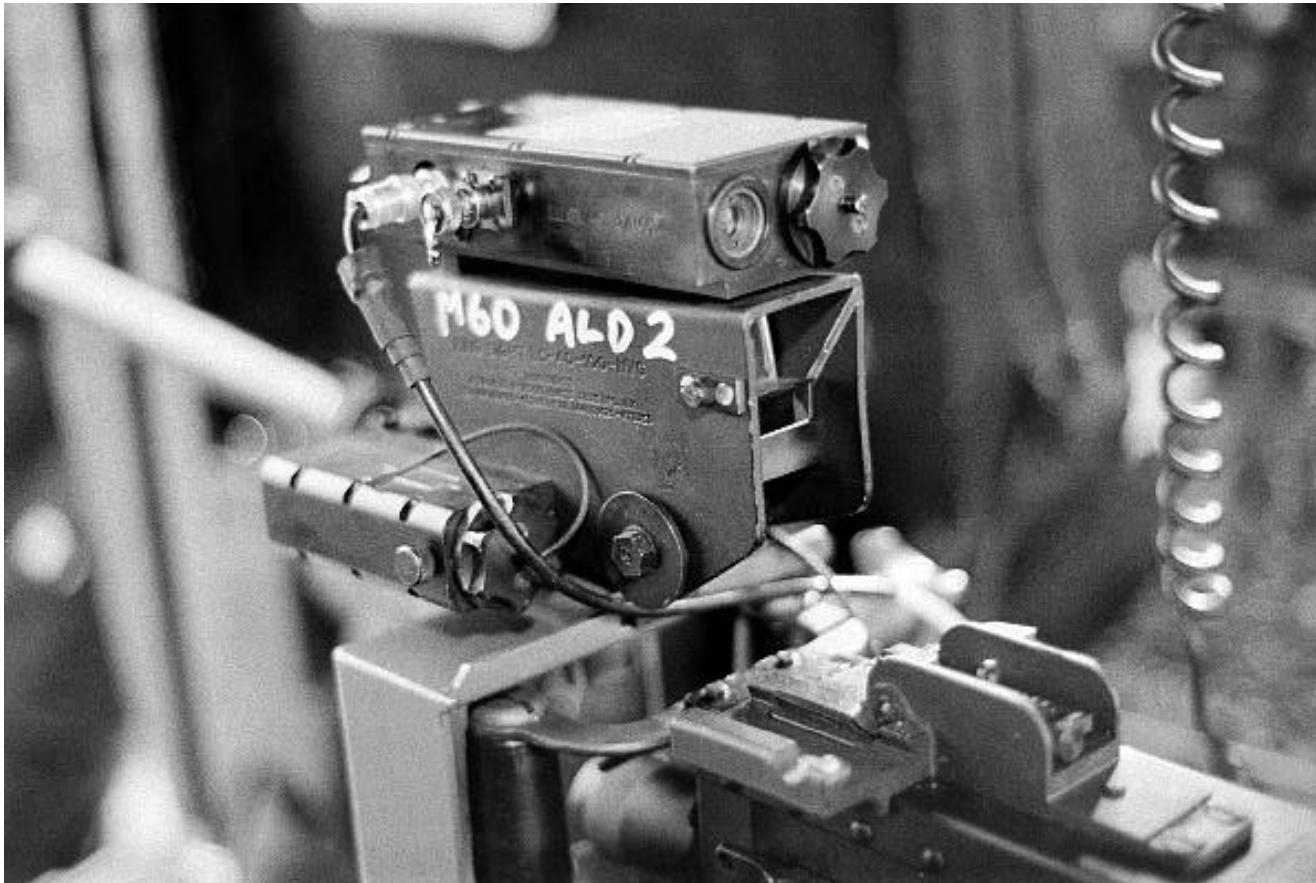
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*Helicopter HMG Door Gun  
Reflex Sight and Laser Illuminator*

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## *The Future*

# Modular Sighting Systems

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## *Definition of Modularity*

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“A flexible sighting **system** in which each major capability is contained within a discrete module”

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# *Why Modularity?*

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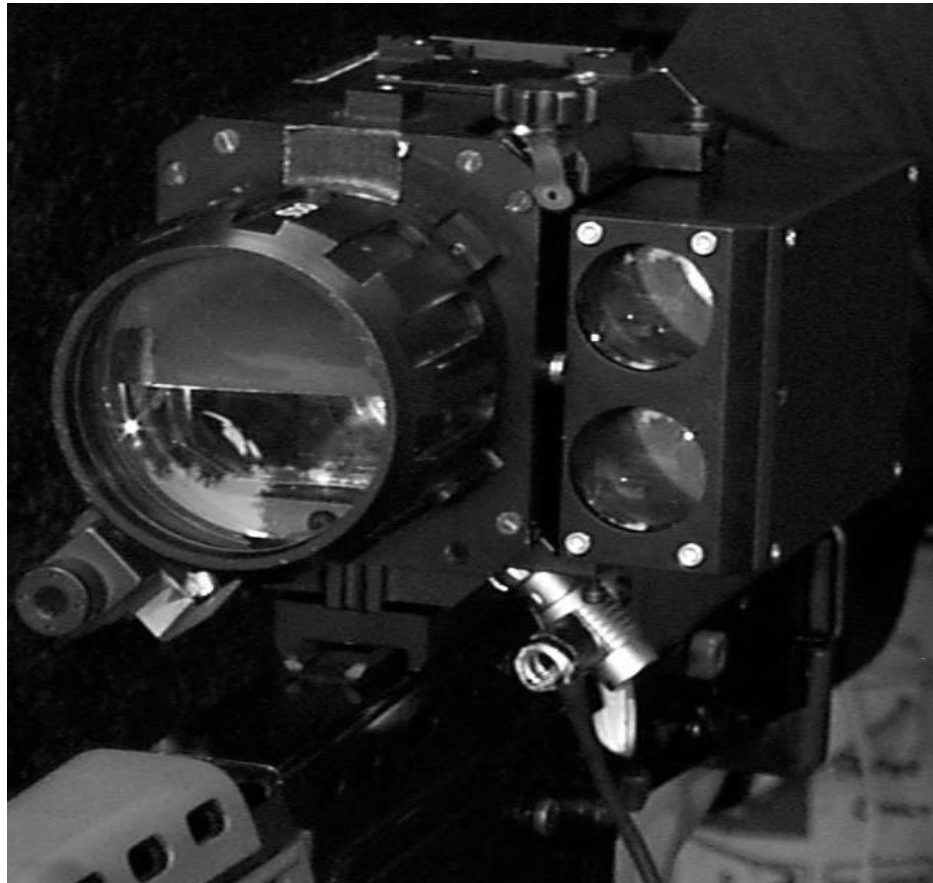
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- Technology Insertions (Future Proofing)
  - Graduated Acquisition
  - Weapon System Adaptable
  - Commonality
  - Role / Mission Tailoring
  - Module Migration From Legacy to Future Equipment
-



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# *Modular Sight*

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# *Potential Modules*

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- 
- Basic Sight Module
  - Video
  - Communications
  - Laser Module
  - Location (GPS)
  - Computer
-

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- **DWS capabilities**

- Day
- Dusk
- Night

- **TWS capabilities:**

- Day
  - Dusk
  - Night
  - TI
-

# *Laser Module*

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- 
- Laser Range Finder
  - Designator
  - Illuminator
  - Aimer
  - Simulator (Training)
-

# *Computer*

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- 
- Ballistics
  - Weapon Control
  - Storage Of Maintenance Data
  - Fuzing
  - Fire Control
  - Embedded Training
  - Built In Test Equipment
-

# *Communications*

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- 
- Control of Other Fire Support Assets
  - Real Time Intelligence/Target Data
  - Meteorological Information
  - Tactical Reports
  - Automated Logistics (Ammunition Re-supply)
  - Fire Co-Ordination
  - IFF
  - Video Up Link
-

# *Displays*

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- Screen
- Head Up Display (HUD)



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# *Final Thoughts*

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- 
- All the technologies needed to significantly enhance the capabilities offered by legacy support weapons already exist
  - Much of the hardware is immediately available for export from light weapon development programmes
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*Questions ?*

